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09/854,234	05/10/2001	Russ Tuck	P4508	8604

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EXAMINER

NGUYEN, PHUONGCHAU BA

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 02/04/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,234

Applicant(s)

TUCK ET AL.

Examiner

Phuongchau Ba Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11-14-03 amendment.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-21, 24, 26, 27 and 29-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☒ Claim(s) 1-14, 21 and 23 is/are allowed.

- 6) ☒ Claim(s) 16-21, 24, 26, 27 and 29-32 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Claim Objections

1. Claim 24 is objected to because of the following informalities: "the circuitry" should be changed to ---a circuitry---

Appropriate correction is required.

Claim Rejections – 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding the method claimed, claim 10 is vague and indefinite because claims are not clear which port (line 12, claim 10) referred to (i.e., in lines 3-6, claim 10)?

Claims 11-14 are also rejected in virtue of their dependency to claim 1.

Claim Rejections – 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 16–20 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (6,240,075).

Regarding claim 16:

Takahashi discloses a multicast-capable data router 10 (fig. 1) having a multicast-capable port 110 (which is the output port 109 being coupled to a replicating module 112) for replicating multicast data packets, the port 110 having at least one ingress path 109 into the port for receiving the data packets, at least one egress path 121 out of the port for outputting data packets, and

a multicast-capable component 112 coupled to the egress and ingress paths of the port, and the multicast-capable component for replicating or re-addressing the data packets; characterized in that data packets assigned for multicasting arrive at the port (i.e., at the egress path 109) and are diverted to the multicast-capable component 112, wherein the packets are replicated or re-addressed and forwarded (i.e., to the ingress path 122).

Regarding claim 17: Takahashi further discloses that the multicast-capable component 112 is integrated into the circuitry (a part) of the multicast-capable port 110 (fig.1):

Regarding claim 18: Takahashi further discloses that the multicast-capable port 110 is a fabric card port 109 (fig. 1).

Regarding claim 19: Takahashi further discloses that the multicast-capable port 110 is the port of a fabric card 80 external to the router 10 (fig. 1).

Regarding claim 20: Takahashi further discloses that a table 118 (fig. 1) containing instructions for multicasting {col.3, line 67 to col.4, line 61}.

Claim Rejections – 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 24, 26-27, 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harriman (5,898,687) in view of Takahashi (6,240,075).

Regarding claim 24:

Harriman discloses a multicast- capable data router (100, fig.1), comprising

a multicast engine 200 (fig.2) having one or more first ports (input ports 102; fig.1) for communicating with one or more second ports (output ports 104; fig.1) of one or more fabric cards 110, and port circuitry 250 for modifying or replicating multicast packets routed to the engine 200; characterized in that multicast packets received from the one or more fabric cards 110 are replicated and/or modified as needed, and forwarded via one or more of the first ports 102 to one or more of the second ports 104.

Regarding claim 23: Harriman discloses that a table (260, fig.2) containing instructions for multicasting Jcol.5, lines 26–45).

Regarding claims 27, 29 & 31:

Harriman (5,898,687) discloses a method for multicasting comprising steps of:

(a) providing a multicast engine 200 (fig.2) within a router 100, wherein the multicast engine 200 having one or more first ports 255 for communicating with second ports (125, 132, 134, 136) of the router 100;

(b) receiving multicast packets at one of the second ports 125 and sending the multicast packets to one of the multicast engines 200 via the first ports 255;

(c) replicating and/or modifying (by 250, fig.2) the data packets for multicasting according to tabled instructions 260 associated with the multicast engine 200 (claim 31);

(d) forwarding the replicated or modified packets to individual ones 125 of the second ports (via 255 through shared memory 112 & address pointer 128; fig.1).

Harriman does not explicitly disclose providing a plurality of multicast engines within a router; and wherein the multicast engine is integrated as a part of a port of a line card in the router.

However, in the same field of endeavor, Takahashi (6,240,075) discloses that a plurality of multicast engines (112, 130; fig.1) wherein the multicast engine 112 is integrated as a part of a port of a line/fabric card 110 in the router 10 (fig.1, Takahashi). Therefore, it would have been obvious to an artisan to apply Takahashi's teaching into Harriman's system and the motivation being to minimize the same packets transmission on the network thus reducing the lost packets by congestion, and to provide simultaneous multicast processing as required by customer {col.4, lines 22-28, Takahashi}.

Regarding claim 30: Harriman does not disclose the claimed features. However, in the same field of endeavor, Takahashi discloses that the multicast engine

110 is a stand-alone component (fig.1) and the second ports (109), with which the first ports 255 communicate, are ports of one or more fabric cards (S1–Sn) in the router 10 (fig.1, Takahashi). Therefore, it would have been obvious to an artisan to apply Takahashi's teaching into Harriman's system and the motivation being to provide simultaneous multicast processing as required by customer {col.4, lines 22–28, Takahashi}.

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harriman (5,898,687) over Takahashi (6,240,075) as applied to claim 27 above, and further in view of Teraslinna (4,991,171).

Harriman and Takahashi do not explicitly disclose that the table instructions 260 associated with individual multicast engines 200 are updated periodically.

However, in the same field of endeavor, Teraslinna (4,991,171) discloses translation table frequently (periodically) updated (col.1, lines 60–62).

Therefore, it would have been obvious to a skilled artisan to apply Teraslinna's teaching into the table in multicast engine as taught by Harriman's system and

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the motivation being to maintain the consistency of the translation table data, especially when packet destination are added or deleted.

Allowable Subject Matter

7. Claims 1-14, 21 and 23 are allowable because over the prior art of the record fails to teach “data packet assigned for multicasting arrive at the port on the egress path and are diverted to the multicast-capable component, wherein the packets are replicated and/or readdressed and output to the ingress path into the port”, which is considered in combination with other limitations that are recited in claims 1-14, 21 and 23.

Response to Arguments

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

A/. Applicant argued in page 11 that Takahashi does not teach all of the specific limitations of applicant's claim, i.e., Takahashi has no capability of

accepting, at input or output, multicast packets and replicating them as claimed.

In reply, applicant is directed to the rejection to claim 16 wherein the router (10, fig.1, Takahashi) comprising multicast port 110, which is resided within the router 10. Also, the multicast port 110 (fig.1, Takahashi) coupled to the output 109 for receiving data packet and replicating the received data packets {fig.1}.

B/. Applicant argued that cross-switch as taught by Takahashi is not as same as the router as claimed, because the cross-switch comprise authorization port and replication module is separated from the cross-switch, while the claimed feature is that the router comprises multicast-port.

In reply, applicant is directed to claim 16 wherein router having a multicast-capable port for replicating multicast data packets (wherein Takahashi teaches the router 10 having a replicating port 110 (the output port being coupled to the replicating module 110) for multicasting received data.

C/. Applicant argued that Takahashi does not teach that element 110 is a port at all.

In reply, applicant is directed to element 110 (multicast-capable port, as claimed, coupled to the egress and ingress paths of the port for replicating the data packet and readdressing the replicated data packet) wherein element 110 comprises a 112 element for replicating ATM cells.

D/. Applicant argued that Takahashi does not teach the multicast-capable port in a fabric card.

In reply, applicant is directed to figure 1 of Takahashi wherein the satellite 10 (fabric card) comprises multicast replication module 110 (a multicast-capable port) being integrated into the output port 109 for replicating data received therefrom.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is 703-305-0093. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone numbers for the organization where this application or proceeding is

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assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.



Phuongchau Ba Nguyen
Examiner
Art Unit 2665



STEVEN H.D. NGUYEN
PRIMARY EXAMINER